# EXHIBIT I

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# IN THE UNITED STATES DISTRICT COURT NORTHERN DISTRICT OF CALIFORNIA OAKLAND DIVISION

EPIC GAMES, INC.,

**Plaintiff** 

v.

Case No.: 4:20-CV-05640-YGR-

**TSH** 

APPLE INC.,

**Defendant** 

EXPERT REBUTTAL REPORT OF MICHAEL I. CRAGG, PH.D.

MARCH 15, 2021

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console players play five to seven times as many minutes per week as iOS Fortnite players. A similar pattern emerges when comparing total revenue per player by console; consoles generate four to eight times the revenue that iOS devices do, on a per-users basis.

TABLE 2: SUMMARY STATISTICS OF US FORTNITE PLAYERS BY PLATFORM

Platform	Avg. Minutes/Week	By Primary Platform		Multi-Platform Users	
		Players (Thousands)	Avg. Revenue	% of Weeks Platform Was Not Used	% of Weeks Platform Was Most Played
iOS	47.37	1,907	\$12.14	80.9%	10.0%
Android	26.85	184	\$6.62	89.6%	4.5%
Windows	88.37	709	\$51.05	64.7%	30.1%
MacOS	23.75	39	\$8.78	92.3%	4.6%
PlayStation 4	318.77	1,861	\$97.64	19.0%	77.9%
Xbox One	245.31	1,717	\$94.12	25.1%	71.2%
Switch	256.43	525	\$52.26	52.7%	39.2%

Sources: EPIC 04315058 (Epic Monthly User data). Epic Games Player Detail History data.<sup>16</sup>

- Table 2 also compares the subpopulation of game players who have played Fortnite across multiple devices. The fourth column of the table shows the percent of weeks that a multiplatform player did *not* play on the console in question. For example, the first row of this column shows that multi-platform game players who play on iOS did *not* play on iOS in 80.9 percent of weeks. On the other hand, multiplatform players more rarely have weeks in which they do not play on consoles. The rightmost two columns of the Table show (1) that for many multi-platform users they have many weeks when they do *not* use a given platform (e.g., 80.9 percent of weeks multi-platform users do *not* use iOS) and (2) that multi-platform users tend to use their consoles (PlayStation, Xbox, and Switch) more than any other platform, both in terms of minutes played, money spent, and the share of weeks that the console is the most used platform.
- 37. Professor Hitt's analysis fails to control for any variables that may be affecting game play or revenue, as is common practice in economics. I perform a corrected analysis to identify the substitution and complementarity across devices. This analysis examines consumers' playtime and expenditures when they acquire another device, properly controlling for other potentially confounding variables.

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The original dataset is referred to as "Epic Games Player Detail History data" in Dr. Evans's opening report, and I understand it was produced to Apple on February 18, 2021. It was amended by errata that I understand was produced to Apple on March 14, 2021.

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Michael I. Cragg, Ph March 15, 2021

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